John D. Ward Esq.
with regards of G.W. Dole

THIRTEENTH

SEMI-ANNUAL REPORT

OF THE

Board of Water Commissioners,

or Crib on the Chicago River.

TO THE

COMMON COUNCIL

OF THE

CITY OF CHICAGO.

JANUARY 1st, 1858.

CHICAGO:
JAMESON & MORSE, PRINTERS, No, 14 LA SALLE STREET.
1858.

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Board of Water Commissioners.

GEO. W. DOLE,
JOHN C. HAINES,
ORRINGTON LUNT.

Officers.

SUPERINTENDENT,
BENJ. F. WALKER.

TREASURER,
GEO. W. DOLE.

SECRETARY,
A. W. TINKHAM.

CLERKS,
JOSIAH H. BROSS,
W. R. LARRABEE.

COLLECTORS,
CHAS. R. VANDERCOOK,
A. HEARTT.

ENGINEERS AT PUMPING WORKS,
D. C. CREGIER, Chief.
C. G. FLEET, Assistant,
FR. TRAUTMANN, Assistant.

Commissioners' Report.

Office of the Chicago City Hydraulic Company,
Chicago, Illinois, March 3, 1858.

To the Honorable, the Mayor and Aldermen of the City of Chicago, in Common Council assembled:

Sirs: The Board of Water Commissioners of the City of Chicago, submit herewith their Thirteenth Semi-Annual Report, setting forth the condition of the Chicago City Hydraulic Co., on the 1st day of January, 1858, and its history for the year 1857.

GENERAL CONDITION OF WORKS.

They have the satisfaction of reporting that the Works entrusted to their particular supervision are in good condition, in effective operation, and yielding a satisfactory revenue.

ADDITIONS TO THE WORKS IN 1857.

Owing to the difficulty of raising money at the low rate of interest to which the Board is restricted in making loans, the additions to the works during the past year have not been so extensive as was hoped for at its opening. They have, however, been by no means unimportant, and what has been done has greatly increased their efficiency.

The additions made during the year tending most to the benefit of the works, are the new 16 inch Main laid along Union Street, and the new and powerful Engine in use since August last.

EXTENSION OF THE MAIN.

Quite early in the season—on the 13th day of June last—the laying of the new 24 and 16 inch main had so far advanced that it was con-

nected with the pumping works, with the old 16 inch main at the junction of Chicago Avenue and Wolcott Street, and also with the distribution pipes at the junction of River and Union Streets. The main, even in this incomplete state, would have afforded a very considerable addition to the amount of water then supplied to the city. It was only on that day, on pumping the water through it, that it was discovered that the river pipe, near the Chicago Avenue Bridge, forming a part of the 24 inch Main, was damaged and unserviceable. Shutting the water off at the stop-cocks on either side of the river—the water then passed through the 16 inch main down Wolcott Street as before; but the hoped for increase to the supply, then much needed, and which would have resulted, owing to this injury, was not obtained. Upon inquiry it was found that the injury was done in the fall of 1856, by the careless driving of a pile, in building the bridge crossing the North Branch at Chicago Avenue. The expense of taking up and replacing the pipe amounted to nearly 2000 dollars, while the delay caused by concealing the fact from the knowledge of the Commissioners was a matter of still more importance. It is to be regretted that it has not, as yet, been found possible to so fasten the doing of the injury upon any responsible parties that the amount of the damage can be recovered from them.

During the repair of the river pipe, the main was still further extended, and on the 20th of July was completed, and has since been in use. The supply is now increased and ensured by a complete circuit of mains, the South Reservoir being now supplied in two directions, from the North as before, and from the West Division by way of Adams Street.

The total length of new Mains laid during the year, amounts to 6,239 feet.

NEW ENGINE—THE PUMPING POWER.

The new engine was completed and ready for use on the 21st of July. Its actual use was delayed, however, to a considerably later period, by the putting in of the new boilers, and by other matters.

So far as this engine has been tested, its performance is entirely satisfactory, and the Commissioners have the belief that as a pumping engine, it is not excelled in the United States.

The pumping power is now very large, and, as it should be, in advance of our present necessities. It is, however, nevertheless true, that

with the erection of the contemplated reservoirs, it will be practicable to run the engines to that extent of their capacity which shall be found to be most economical.

It is the estimate of the Superintendent that either of the two pumping engines is capable of supplying, at a fair rate of consumption, Two Hundred Thousand inhabitants.

With this notice of the engines, it should also be observed, that the ability to make steam is commensurate with the machinery to be set in motion. There are now in use, or ready for use, three large marine boilers, each making sufficient steam to drive either engine, and so connected that the steam from any of the boilers can be used on either engine.

The cost of the engine and two boilers, complete, was, by contract, $51,000. For a small amount of extras outside of the contract, the additional sum of $417 07 was paid, making the whole cost $51,417 07.

For preparing the foundations supporting the engine, for changes at the engine house made necessary by introducing the new engine, for the smoke pipe and all matters not included in the foregoing sum, a further sum of $7,603 98 has been expended, making the whole expenditure for the engine and boilers and all matters resulting from their introduction, $59,021 05.

NON-CONDENSING ENGINE.

The small non-condensing engine is not now in use; it has been removed from the engine house and is for sale.

DISTRIBUTING PIPES.

May 30th, a contract was executed with Silas Merchant, Esq., of Cleveland, for the delivery this season of 1000 tons of distribution pipes, commencing with Aug. 1st. His contract has been nearly filled, about 900 tons have been delivered, and the balance is ready for shipment.

The demands upon the Commissioners for the extension of the water pipes the past year have been very numerous and pressing. It was the design of the Board to have laid the past season all the pipe received from Mr. Merchant. The laying of pipe commenced early in August, and the Commissioners were prevented from carrying out fully their design as stated above, only by the unusual disturbance of money matters which soon after succeeded; as it is, there is on hand and paid for an amount of distributing pipes sufficient to lay about four and one-half miles.

It will not be out of place here to remark that it is the desire of the Commissioners to respond to the necessities of the City in extending the pipes to districts destitute of water, and in making all needed additions as far and as fast as they have the authority and means.

Besides the length of main laid, already given, there were put down of distributing pipes in 1857, in the different Divisions of the City, as follows:

North Division,	8,929 feet.
South "	5,961 "
West "	8,918 "

Making a total of 23,808 feet, or a little exceeding four and one-half miles.

The whole length of pipe, of all sizes, now laid in the City is fifty-eight miles and nine hundred and seven feet.

SUPPLY OF WATER DURING 1857.

During the earlier part of the year, owing to the many repairs in progress, the inadequacy of the single main then in use to convey the water pumped, the making of connections from the extension of the main, and more especially from the changes going on at the engine house made necessary by the erection of the large engine, the interruptions to the supply of water were comparatively frequent and were made the subject of considerable complaint. The Commissioners can assure the citizens that such irregularities are not more annoying to others than to themselves, and that they are avoided where it is possible. Since the connection of the additional mains and the use of the new engine, the supply has been uninterrupted and satisfactory.

WORK TO BE DONE IN 1858.

It is the intention of the Board to commence building the Reservoirs for the North and West Divisions of the City, as soon as funds can be obtained for the purpose; advertisements, asking for proposals for these constructions, are now published. The building of these two reservoirs, as far as shall be practicable in one season, and some extension of the distributing pipes, are the principal additions to the works had in view for the present year.

INCOME OF THE WORKS IN 1857.

The income of the works from water rents, assessments, and the profits of tapping pipes, was as large in 1857 as was anticipated. The

total revenue for the year from these sources amounts to $97,008 55, being greater than the income of 1856, by about Twenty Thousand Dollars.

MEANS FOR BUILDING THE WORKS AND THEIR APPLICATION.

The means of the Board for the construction of the Water Works have been wholly derived from the sale of Bonds.

At the close of the year 1857, the whole issue of the Bonds amounted to	$846,000 00
There were besides, Jan. 1st, 1858, outstanding liabilities, properly making a part of the cost of the works or of the expenses, and charged in the appropriate accounts, amounting to	13,300 97
	$859,300 97

The Bonds and outstanding liabilities as above, are accounted for as follows:

Water Works, (or Construction and Extension accounts,) cost, Jan. 1, 1858,	$738,436 51
Water Pipe on hand,	22,382 74
Coal on hand,	9,851 86
Stock, or Machinery, Tools and Materials on hand,	9,791 11
Office Furniture.	229 80
Discount on Bonds,	77,236 89
Balance of Interest and Operating Expenses from commencement of work not met by income,	74 96
City of Chicago, Pipe laid on account of City,	1,069 30
Sewerage Commissioners, work done for them,	143 20
Balance in hands of Geo. W. Dole, Treasurer,	84 60
	$859,300 97

WATER WORKS—SELF-SUSTAINING.

As is generally known, it was the design in projecting the Water Works, that they should be self-sustaining; and that without aid from the City, other than what was needed while the works were being constructed and affording no revenue, the expenses for operating and interest on the money borrowed to build the works, should be met by the income from the rents, and that from this source also provision

should be made for the ultimate redemption of the bonds issued by the Water Commissioners. It is now about four years since water was first supplied to buildings by the City, and the experience of this period shows that these expectations were well founded. The steadily increasing revenue of the several years, and the gradual relative gain of the income over the costs of operating the works and interest, give all the assurance that could be looked for,—that the Water Works are, as intended, and as they ought to be, self-supporting, and sufficiently remunerative to show that they will extinguish in due time the debt contracted for their construction.

COMPARATIVE VIEW OF THE COSTS, EXPENSES AND INCOME OF THE WORKS FOR THE SEVERAL YEARS SINCE OPERATING THEM.

The better to exhibit the comparative cost, expenses and income of the work since its commencement, and more particularly to exhibit the relative gain of the income as compared both with the expenses and the cost of the work, we have prepared the following table giving these facts in one view for the several years, from 1854 and onward to the present time.

Years.	Cost of the Work at the close of year.	Operating Ex- and Interest for the year.	Per ct. of Op. Exp. and Int. to cost.	Income for the year.	Per ct. of of the Income to the cost.	Deficiency of revenue to meet Op.Exp and Int.	Excess of revenue over Op. Exp. and Interest.
*1854	$393,045 32	†$38,128 51	Per ct.	$26,808 56	Per ct.	11,319 95	
1855	496,849 64	59,051 27	11 9-10	54,739 19	11	4,312 08	
1856	641,509 93	73,087 23	11 4-10	76,806 36	12		3,719 13
1857	738,436 51	85,170 61	11 5-10	97,008 55	13 1-10		11,837 94
		$255,437 62		255,362 66		15,632 03	$15,557 07
		Balance of Ex. and Int accts. from comme't of work.		Total Income from comme't of work.			

* Pipes were first tapped Feb. 15th, 1854, and water was then first introduced into buildings.
† Operating Expenses for 1854, and balance of Interest account at the close of the year.

Leaving out the year 1854—the year when water was first supplied from the pipes, and for which both the operating and interest costs, and the receipts from water rent, are for a part of the year only—it will be observed that the operating expenses and interest for the last three years bear a constant proportion to the cost of the work at the ends of the several years, being for each year about 11½ per cent. of the cost of the work. That for the same period the income has borne a

regularly increasing proportion to the cost of the work, being for 1855, 11 per cent., for 1856, 12 per cent., and for 1857 13 per cent. of the whole cost; and finally, that, commencing with the year 1854, there was a lack of revenue to meet the expenses and interest of $11,319 95; that with the next year, 1855, the income more nearly met the expenses, but still falling short several thousand, the deficit was, by this increase, made $15,557 07. The year 1856 shows an excess of revenue of $3,-719 13, and the year 1857 an excess of $11,837 94, essentially making up the deficiency of the two earlier years of operating the works. Henceforward the income will, without doubt, continue to exceed the costs both of operating and the payment of interest on the bonds issued by a liberal surplus. The excess for the present year can hardly fail of reaching $15,000.

By the law incorporating the Chicago City Hydraulic Co., as well as by the act supplemental to the same, it is made the duty of the Commissioners in the event of the accumulation of the receipts to a greater amount than is necessary for the payment of the current expenses of the works and the interest on the bonds isssued by them, to invest such surplus amount in such a way as shall provide for the payment of the principal and interest of the bonds. If the purchase can be made at not over their par value, then the surplus is to be applied to the purchase of the bonds, but if not, the investment is to be made in other specified securities. It will be necessary, therefore, the present year to make the investment required as stated above, so that before its close the Company will become the purchaser of its own bonds, provided they can be bought within the limits defined by law.

In this connection it will not be out of place to consider what amount will be required to be paid yearly, in order to pay the several loans of the Board within the time they become due. The whole of the present issue of Bonds amounts to $846,000, all six per cent. bonds, and payable at various times, from July 1st, 1874 to July 1st, 1882. Admitting that commencing with 1858 and ending with 1882, there be year by year a surplus revenue of $14,000 from the works within their present limits, and as paid for by the bonds already issued, the surplus to be increased only by the interest which would have been paid on the retired bonds, this surplus with the accumulations from interest thus saved will be sufficient to purchase the whole issue within the dates when they become due, if it be possible to buy the bonds at their seven per cent. par value.

The entire payment of the several loans within their respective periods from the profits of the works is not imperative, and the Commissioners are charged with proper authority to otherwise provide, should it be necessary. The excess of receipts which is required for this purpose is, however, comparatively small, and the burden of it is hardly felt. By this method of gradually extinguishing the debt, the Water Works will, with ease to the City, in a reasonable time be free from liabilities other than such as shall be formed for extensions, which, from their own accompanying revenue, will take care of the debts contracted for them.

TABLE OF WATER CONSUMERS AND PARTIES PAYING WATER TAX.

Appended to this report is a table prepared under the direction of the Secretary, showing in detail the number and kinds of buildings using water, and the different amounts to be collected from them and for all uses of water, and for water assessments for the year commencing May 1st, 1858.

To call attention to its general facts a short summary of this table is given below.

There are in the City, within the water district, paying as tax or water rents—

	No.	Rent or Taxes.
Dwelling Houses,	6641	$ 62,036 50
Stores, Offices, Banks and large Commercial Buildings, Warehouses and Packing Houses, Market Houses and Stalls,	756	7,881 50
Churches, Halls, Schools, Hospitals, Jail, Court House, Fire Engine Houses, and Public Buildings,		1,320 35
Barbers' Shops and Bathing Saloons,	25	423 00
Hotels, Boarding Houses, (in part made up of houses having extra families,) and Drinking Saloons,	672	14,982 26
Stables,	150	3,019 00
Mechanical Shops, together with Laundries, Bakeries, Wood and Stone Yards, Gas Co., Distilleries and Breweries, a large proportion of the Shops having Steam Engines,	255	7,647 59
Amount forward,		$97,310 20

Amount brought forward,		$97,310 20
Printing Offices, a portion having Steam Engines,	14	520 75
Railroads supplying Passenger & Freight Depots,	7	531 00
" " Locomotives,	6	2,907 75
Sprinkling Streets, Building purposes, Water Cartmen, Fountains and use of Hose at Dwellings,		2,957 67
		$104,227 37

USE OF THE WATER IN MANUFACTURING ESTABLISHMENTS, AND FOR RAILWAYS.

A reading of the table, of which the foregoing summary is given, shows uses of the water furnished by the Company more various and extensive than those not familiar with the Works, are ordinarily aware of. It shows besides, to what an extent the City is dependent upon the regular and efficient operation of the Works, not only for its comfort, for cleanliness, and the preservation of health, but for the prosecution of its business enterprises.

We will notice two instances illustrating this fact.

Besides its ordinary uses in Dwellings, Hotels, Laundries, Stores, small Factories, and public and private buildings generally, there are in use in the City some One Hundred and Forty Steam Engines or more, running every kind of machinery, and carrying on all ordinary varieties of manufacture, which obtain their water from the Works, and are dependent upon its regular supply for the punctual execution of the current business of their establishments.

Again, of the Railways centering in the city, six of the most important supply their locomotives, from the Water Works, while those roads not using the water for this purpose, use large amounts in their depots for employees, supply of passenger trains, heating of buildings, &c.

Referring to the appended reports of the Treasurer, Secretary, and Superintendent, for more detailed views of the matters to which we

have called your attention, we respectfully submit the whole for your consideration.

GEORGE W. DOLE,
JOHN C. HAINES,
ORRINGTON LUNT,
Board of Water Commissioners.

STATE OF ILLINOIS, } ss.
COOK COUNTY, }

I, JASPER A. HOISINGTON, a Justice of the Peace of said County, do hereby certify that the above Statement was duly sworn to, before me, by the above named Commissioners this eighth day of March, A. D. 1858.

J. A. HOISINGTON, J. P.

Treasurer's Report.

BOARD OF WATER COMMISSIONERS
OF THE CITY OF CHICAGO,

1857. *In account with* GEO. W. DOLE, *Treasurer.* CREDIT.

July	1	By balance on hand			86 92
	6	" received of A. W. Tinkham, Sec'y ..	353 45		
	8	" " " " " " ..	738 10		
	11	" " " " " " ..	873 72		
	15	" " " " " " ..	911 05		
	18	" " " " " " ..	550 15		
	"	" " for labor weighing and selling Colwell & Co.'s and R. D. Wood & Co.'s broken pipe	16 00		
	21	" " from A. W. Tinkham, Sec'y	371 78		
	23	" " " " " "	572 13		
	27	" " " " " "	435 47		
	29	" " " " " "	510 00		
	"	" " " Union Tel. Co., repairing dock Chic. Av. bridge	70 00		
	31	" " " A. W. Tinkham, Sec'y	464 10		
					5,865 95
Aug.	4	" " " " " "	469 00		
	5	" " " " " "	438 58		
	8	" " " " " "	475 35		
	12	" " " " " "	554 30		
	"	" " " Sewerage Coms.....	6 00		
	17	" " " A. W. Tinkham, Sec'y	372 10		
	21	" " " " " "	423 20		
	24	" " " " " "	361 50		
	29	" " " " " "	405 80		
					3,505 83
Sep.	4	" " " A. W. Tinkham, Sec'y	443 62		
	8	" " " " " "	484 05		
	14	" " " " " "	559 50		
	"	" proceeds of their note of 60 days payable at Marine Bank	6,853 00		
	17	" received of A. W. Tinkham, Sec'y ..	283 40		
	23	" " " " " "	446 98		
					9,070 55
		Amount forward			18,529 25

ACCOUNT CONTINUED.

		Amount brought forward					$			18,529 25
Oct.	8	By proceeds of their note of 40 days payable to W. M. Doughty						1,350	00	
	9	"	received of A. W. Tinkham, Sec'y					264	83	
	"	"	sums on pay rolls not called for					28	57	
	17	"	from A. W. Tinkham, Sec'y					593	21	
	23	"	"	"	"	"		197	00	
	"	"	"	sale of lead & one 16 in. sleeve				158	23	
	26	"	"	A. W. Tinkham, Sec'y				175	00	
	"	"	"	sale of pile driving frame				50	00	
	"	"	"	judgment vs. Thompson, Andrews & Co.				25	00	
	29	"	"	A. W. Tinkham, Sec'y				575	02	
	"	"	"	sale of 2-10 inch pipe				32	33	
										3,449 19
Nov.	3	"	received from A. W. Tinkham, Sec'y					1,792	65	
	4	"	"	"	"	"	"	1,182	41	
	5	"	"	"	"	"	"	844	75	
	6	"	"	"	"	"	"	1,087	37	
	7	"	"	"	"	"	"	1,355	38	
	9	"	"	"	"	"	"	624	00	
	10	"	"	"	"	"	"	1,026	50	
	11	"	"	"	"	"	"	782	50	
	12	"	"	"	"	"	"	545	27	
	13	"	"	"	"	"	"	607	00	
	14	"	"	"	"	"	"	728	25	
	17	"	"	"	"	"	"	1,349	03	
	18	"	"	"	"	"	"	624	50	
	20	"	"	"	"	"	"	792	16	
	21	"	"	"	"	"	"	458	10	
	23	"	"	"	"	"	"	469	00	
	24	"	"	"	"	"	"	1,060	47	
	25	"	"	"	"	"	"	714	49	
	27	"	"	"	"	"	"	1,379	69	
	28	"	"	"	"	"	"	853	50	
	5	"	"	"	sale of of 9 W. Loan bonds and 9 Jany 1st coupons			8,248	80	
										26,525 82
Dec.	1	"	"	"	A. W. Tinkham, Sec'y			5,156	18	
	2	"	"	"	"	"	"	1,130	72	
	3	"	"	"	"	"	"	692	50	
	4	"	"	"	"	"	"	639	22	
	5	"	"	"	"	"	"	644	00	
		Amount forward					$	8,262	62	48,504 26

ACCOUNT CONTINUED.

		Amount brought forward						$ 8,262	62	48,504	26
Dec.	7	By received from A. W. Tinkham, Sec'y						541	75		
	8	"	"	"	"	"	"	687	38		
	9	"	"	"	"	"	"	508	75		
	10	"	"	"	"	"	"	529	33		
	11	"	"	"	"	"	"	354	20		
	12	"	"	"	"	"	"	331	50		
	14	"	"	"	"	"	"	480	89		
	"	"	"	"	sale of 32 pigs lead			154	08		
	15	"	"	"	putting up public hydrants, &c.			100	00		
	"	"	"	"	A. W. Tinkham, Sec'y			578	45		
	16	"	"	"	"	"	"	600	00		
	17	"	"	"	"	"	"	460	09		
	18	"	"	"	"	"	"	375	78		
	19	"	"	"	"	"	"	350	00		
	21	"	"	"	"	"	"	854	25		
	22	"	"	"	"	"	"	412	25		
	24	"	"	"	"	"	"	980	51		
	"	"	"	"	"	"	"	467	89		
	26	"	"	"	"	"	"	73	90		
	"	"	"	"	putting up fire hydrant at theatre, McVicker's			276	03		
	28	"	"	"	A. W. Tinkham, Sec'y			535	53		
	29	"	"	"	"	"	"	322	08		
	30	"	"	"	"	"	"	212	00		
	31	"	"	"	"	"	"	275	05		
	"	"	"	"	"	"	"	629	54		
	"	"	"	"	"	"	"	833	75		
	"	"	"	"	laying pipe at Round House G.&C.U.R.R.			89	10		
	"	"	"	"	C. M. & Fire Ins. Co. for int. on deposits			66	26		
										20,342	96
1857		CONTRA, Dr.								68,847	22
Dec.	31	To am't paid on A. W. Tinkham, Sec'y's warrants, No.'s 136–414 inclusive						68,762	62		
	"	" balance on hand cr. in new ac.						84	60		
										68,847	22
1858		CONTRA, Cr.									
Jan.	1	By balance on hand deposited with C. M. & Fire Ins. Co.						84	60		

GEO. W. DOLE, Treasurer.

Secretary's Report.

WATER COMMISSIONERS' OFFICE,
CHICAGO, ILL., January 1st, 1858.

To the Board of Water Commissioners of the City of Chicago:

SIRS:—I have the honor herewith to submit to you the usual annual statements exhibiting the condition of the affairs of the Chicago City Hydraulic Co., on the 1st day of January, 1858, and showing also what has been received and what expended, first for the latter half of 1857, and finally during the whole of that year. That each year might bear such expenses as properly belong to it, the accounts for extending the works and for operating also, are not only debited with the payments made for these objects, but also with all debts incurred for them.

The several statements are numbered, and are as follows:

Statement No. 1 shows the condition of the affairs of the Chicago City Hydraulic Co., Jan. 1st, 1858, as taken from the ledger.

" " 2 shows the receipts and expenditures from July 1st, to Dec. 31st inclusive, 1857.

" " 3 shows the receipts and expenditures from January 1st, to Dec. 31st inclusive, 1857.

" " 4 exhibits in detail the expenditures during 1857.

The examination of the results of the year will, I trust, be as satisfactory to you as it has been to me. The income from water rents and assessments has been quite as large as could reasonably be expected, while the expense of maintaining and operating the works has not exceeded its usual proportion to their cost, and has not advanced in equal rate with the consumption of water and with the rents. The increase of the income of the year 1857 over the income of the year 1856, is a little more than twenty thousand dollars.

Our latest semi-annual collection commenced with November 1st, at

a time when every payment was deferred as long as possible, and all collections were made with unusual difficulty. This condition of things had its effect on the payment of water rents. That the receipts were as well sustained as they were, I am gratified, and know that much is due to the fact that the collections for the months of November and December were pressed with more than ordinary diligence. The inactivity of business affects the water works as well as other parties. Although not affected to the same extent as business concerns generally, still the closing up for the winter, or partial suspension of so many of the large manufacturing and other large establishments, and the curtailing of the business of most of our large consumers, make the aggregate of the rents collected for the year sensibly less than it would have been with times of ordinary prosperity.

In the districts newly supplied with water last season, the pipes were laid late in the year, and the effect of this extension will be felt as much in the present year or more than in the last.

The receipts for revenue for the year 1857, are as follows:

Water rents and assessments collected,	$95,983 52	
Excess of amounts received over costs for tapping pipes,	1,025 03	
Total income for the year 1857,		$97,008 55

The expenditures for interest and the operating expenses for the same time, (this last including whatever bills belonging to that account remained unpaid at the close of the year,) are as follows:

Total interest payments during 1857,	$49,265 72	
Total operating expenses during 1857,	35,904 89	
Total of interest and operating expenses for the year 1857,		$85,170 61
Excess of revenue over interest and operating expenses		$11,837 94

The water rents and assessments unpaid, January 1st, 1858, amount as follows:

For the year May 1st, 1857 to May 1st, 1858:				
North Division.	Water rents,	$1,640 32		
" "	Assessments,	1,315 16	2,955 48	
South Division.	Water rents,	5,308 22		
" "	Assessments,	1,399 45	6,707 67	
West Division.	Water rents,	3,139 45		
" "	Assessments,	1,037 00	4,176 45	$13,839 60
For years previous to the year commencing May 1, 1857: and for the collection of which warrants have been issued.				
North Division,			243 50	
South "			825 00	
West "			234 83	$1,303 33
Total amount, January 1st, 1858, of uncollected water rents, assessments, and warrants,				$15,142 93
From the commencement of the works to January 1st, 1858, the expense for interest and costs of repairs and of operating the works, or the balance of interest and operating expense accounts, amounts to				$255,437 62
The total receipts for revenue from the commencement of operating the works, amount to				255,362 66
Amount by which the total costs exceed the total income on the 1st day of January, 1858,				74 96

The total deficiency declared at the rendering of the last report was $11,912 90; the excess of the present year $11,837 94, has paid this deficiency save the unimportant balance stated above.

The increase in the number of buildings supplied with water continues large, although from the comparatively small amount of new pipe laid, the increase, as might be expected, is not so large as for the year 1856.

Number of taps inserted in the water pipes in 1857,	862
" " " " " " " " previously,	3662
Total number January 1st, 1858,	4524

The number of buildings into which water was introduced during the year 1857, is stated as follows:

In the North Division,	448
" South "	405
" West "	415
Total during the year,	1,268
Buildings supplied previously,	5,891
Total number of buildings, January 1st, 1858, into which water has been introduced,	7,159

These buildings are distributed in the different Divisions of the City, as follows:

North Division,	1,801
South "	3,560
West "	1,798
Total buildings having water,	7,159

Due notice having been previously given, on the 30th day of May last, bids were received for the furnishing in this city of 1,000 tons of 4, 6 and 8 inch cast iron water pipes, inclusive of the necessary branches, tapers, caps and sleeves. The proposals received are given below, and unless otherwise stated are for the ton of 2,000 lbs., delivered in Chicago.

Swartz, Sprague & Martin, Buffalo, $60 per ton.		
Morris, Tasker & Co., Phila., $56 50	"	
William Roy, New York, $46	"	of 2,240 lbs. delivered in New York.
R. D. Wood & Co., Phila., $47	"	for the straight pipe and $50 per ton for tapers, branches, caps, and sleeves.
Colwell & Co., Philadelphia, $47	"	for the straight pipe and $50 per ton for tapers, branches, caps, and sleeves.
Silas Merchant, Cleveland, $47	„	inclusive of the small castings.

The lowest bid, that of Silas Merchant, Esq., Cleveland, was accepted, and a contract executed with him. His contract has been nearly filled; about 900 tons have been received and paid for. The balance, I am advised, is ready for shipment.

Besides the several financial statements to which I have referred as forming part of this report, I have appended the table showing the number of buildings and establishments of all sorts in the city subject to water rents and assessments, and showing also the amount which will be due from the same for the year commencing May 1st, 1858, and ending May 1st, 1859. The table was prepared, not without a good deal of care and labor, by Mr. J. H. Bross, the principal clerk of the office, and will well repay examination.

The total footing of the table, showing the amount to be collected in the year commencing May 1st, next, is considerably below what the actual collections are expected to amount to. The expected increase depends principally upon the erection of new buildings on streets where pipes are laid, and the extension of the pipes through districts not yet supplied. The footing of the similar table for the year May 1st, 1857 to May 1st, 1858, is $85,012. The collections January 1857 to January 1st, 1858, amounted to $95,983 52.

The organization of the office has undergone little change during the past year. Its business is to a great degree confined to the collections and accounts, and the proper recording of all such information relative to water takers, and property subject to taxation as is of importance.

The clerks of the office are Mr. J. H. Bross and Mr. W. R. Larrabee. The collectors on salary are Mr. C. R. Vandercook, Mr. Fred. Roth and Mr. A. Heartt. Mr. Jno. Coburn has also been so employed for a short time. Mr. John Elmer is engaged in collecting on a commission. To all of the gentlemen of the office, I take this opportunity of expressing my appreciation of the promptness and efficiency with which they have discharged their appropriate duties.

I find the total expenses of the office during 1857 to amount to $5,918 14, which is for office rent, clerical services, services collecting, advertising, printing, stationery, office fixtures, &c.

With the view of seeing what amount of this expense might be paid by the ten per cent. penalty charged to water takers who defer payment

more than a month on their bills falling due May 1st and November 1st, I have gathered up these little sums from the several rent books, and find the total of penalties collected during 1857 to amount to $2,163 66.

Very respectfully,
Your ob't servant,
A. W. TINKHAM,
Secretary.

STATEMENT NO. 1,

OF THE AFFAIRS OF "THE CHICAGO CITY HYDRAULIC COMPANY," DEC. 31ST, 1857.

	Dr.
Water Works, total expenditure to December 31st, 1857, and outstanding indebtedness at that date,	$ 738,436 51
Operating expenses, total expenditures to December 31st, 1857, and outstanding indebtedness at that date,	115,584 28
Interest on bonds,	115,208 34
Duncan, Sherman & Co., coupon acct. to pay January interest and unpaid coupons of July 1st, '57,	24,645 00
Discount on bonds,	77,236 89
Office furniture,	229 80
Water pipes, for water pipes on hand Dec. 31st, 1857,	22,382 74
Coal, for coal on hand, Dec. 31st, 1857,	9,851 86
Stock, for machinery, tools, &c., on hand Dec., 31st, 1857,	9,791 11
City of Chicago, for pipe laid on account of the city,	1.069 30
Sewerage Commissioners,	143 20
Geo. W. Dole, Treasurer, balance in his hands,	84 60
	$1,114,663 63

	Cr.
Bond acct., water loan bonds issued to Dec. 31st, 1857,	$ 846,000 00
Income ac., water rents, assessments, &c., " "	255,362 66
George W. Quintard, balance due him " "	1,081 77
Outstanding accounts for extension of water works,	5,767 04
" " " operating expenses,	6,452 16
	$1,114,663 63

STATEMENT NO. 2,

RECEIPTS AND EXPENDITURES FROM JULY 1ST, TO DECEMBER 31ST, 1857.

RECEIPTS.

Water rents and assessments,	$ 49,818	92
Receipts for tapping the distributing pipes,	1,260	23
Putting up public hydrants, receipts for shutting off and letting on water, &c.,	257	75
Sale of seventy water loan bonds,	62,855	86
For interest which accrued on the above bonds from July 1st to dates of sale,	747	34
From sales of pipe,	48	33
" Colwell & Co. and R. D. Wood & Co., for labor weighing and selling broken pipe belonging to said parties,	16	00
" sale of pile driving frame,	50	00
" " 62 pigs of lead,	296	31
" Union Telegraph Co. for repairing dock at Chicago Avenue bridge,	70	00
" Sewerage Commissioners for labor done for them,	6	00
" J. H. McVicker for fire hydrant at his theatre,	276	03
" G.& C. U. R.R. Co. for laying pipe at the Co.'s Round House,	89	10
" Judgment vs. Thompson, Andrews & Co.,	25	00
" Amounts included in the pay rolls and not paid out,	28	57
" Geo. W. Quintard for 18 lbs. old copper pipe, 1 globe valve, &c.,	10	50
" C. M. & F. Ins. Co. for interest on deposit account,	66	26
	$ 115,922	20
Add balance in the Treasurer's hands July 1st, 1857,	86	92
	$ 116,009	12

EXPENDITURES.

Water works, (expenditnres for the new engine and extending the water pipes chiefly,)	$ 46,691	38
Operating expenses, not including coal on hand Jan. 1st, 1858	9,542	70
Coal on hand January 1st, 1858,	9,851	86
Interest,	27,041	61
Expenditures for labor and service cocks, tapping pipes,	414	23
Water pipes on hand January 1st, 1858,	22,382	74
	115,924	52
Add balance in Treasurer's hands January 1st, 1858,	84	60
	$ 116,009	12

STATEMENT NO. 3,

RECEIPTS AND EXPENDITURES FROM JAN. 1ST, 1857 TO DEC. 31ST, 1857, INCLUSIVE.

RECEIPTS.

Water rents and assessments,	$ 95,983	52
Receipts for tapping the distributing pipes,	2,116	23
" " putting up public hydrants and for shutting off and letting on water,	313	95
Sale of 96 water loan bonds,	86,209	85
For interest which accrued on bonds sold from Jan. 1st or July 1st, to dates of sale,	1,044	02
From sales of pipe,	161	17
" " " broken pipe,	257	69
" " " pile driving frame,	50	00
" " " 62 pigs lead,	296	31
" Colwell & Co. and R. D. Wood & Co. for labor weighing and selling broken pipe belonging to said parties,	16	00
" Jno. Meehan for amount overpaid him in 1856,	50	00
" Amounts on pay rolls,—included in them but not paid out,	38	07
Amount forward	$ 186,536	81

Amount forward,	$ 186,536 81
From Union Telegraph Co., for repairing dock at Chicago Avenue bridge,	70 00
" Sewerage Commissioners for labor done for them,	6 00
" J. H. McVicker for erecting a fire hydrant at his theatre,	276 03
" G. & C. U. R. R. Co. for laying pipe at the Co.'s Round-house,	89 10
" Judgment vs. Thompson, Andrews & Co.,	25 00
" C. M. & F. Ins. Co. for premium on gold and eastern and interest on deposits,	301 48
" Geo. W. Quintard for 18 lbs. old copper pipe, 1 old globe valve, &c.,	10 50
	$ 187,314 92
Add balance on hand Jan. 1st, 1857,	4,570 94
	$ 191,885 86

EXPENDITURES.

Water Works, payments for new engine, extension of main and distributing pipes,	$ 85,735 81
Operating expenses, payments for expenses at the engine house and all payments for collection of revenue, care of and operating works,	22,587 15
Interest, coupon payments of July and January, exchange and interest on temporary loans,	50,611 22
Coal on hand January 1st, 1858,	9,851 86
Service cock &c., payments for tapper's services, service cocks, &c.,	632 48
Water pipes on hand January 1st, 1858,	22,382 74
	$ 191,801 26
Add balance in Treasurer's hands Jan. 1st, 1858,	84 60
	$ 191,885 86

STATEMENT NO. 4.

EXHIBIT IN DETAIL OF EXPENDITURES FROM JAN. 1ST, 1857. TO DEC. 31ST, 1857. INCLUSIVE.

WATER WORKS.

EXTENSION ACCOUNT.

New condensing steam engine, boilers, pumps, &c.,	$23,999	53
Smoke pipe of new engine,	533	00
Iron work relating to new engine,	314	03
Masonry, &c., foundation new engine,	155	07
Labor,---on foundation of new engine, and on matters made necessary by putting in the new engine	1,329	65
Masonry, &c., foundations boiler of new engine,	81	54
Repairs at engine house made necessary by new engine,	101	94
Gas fitting at engine house for do.	31	67
Lumber for repairs at engine house on account of new engine,	73	99
Services of consulting engineer,	1,024	82
Miscellaneous,	26	84
Tools and repairs of tools,	71	84
Labor on 16 inch main,----trenching, backfilling, laying pipe, testing pipe, &c.,	3,441	57
Trenching and backfiilling by contract for 16 in. main,	1,083	42
Cast iron pipes for main,	19,526	52
Expenditures on testing press,	36	39
Small castings for main,	31	10
Packing "	24	47
Dockage,	50	00
Amount forward,	$ 51,937	39

Amount forward,	$ 51,937 39	
River pipe at Chicago Avenue,	77 44	
Filling sand around river pipe at Chicago Avenue,	500 00	
Hauling 16 inch pipe,	71 50	
Spikes and nails,	6 43	
Forage for horse,	9 00	
Taking up and replacing river pipe near Chicago Avenue bridge,	1,909 01	
Assessment for side walk W. reservoir lot,	49 29	54,560 06

WATER PIPE EXTENSION.

Labor (testing and laying pipe chiefly)	1,928 10	
Trenching and backfilling, (for distributing pipes),	1,366 72	
Water pipes used in 1857,	20,711 70	
Castings for bevelled hubs, branches, sleeves, caps, &c.,	1,624 29	
Dockage of pipe, rent of pipe yard for press, pipes, &c.,	881 31	
Hauling pipes,	236 36	
Lead,	2,342 41	
Fire hydrants,	306 33	
Hydrant boxes,	455 48	
Stop-cocks,	3 75	
Iron and iron works,	129 32	
Tools,	89 71	
Packing,	9 00	
Lumber,	13 68	
Spikes and nails,	53 30	
Repairs for testing press, oil for do., &c.,	110 57	
Miscellaneous,	34 29	
Repairing harness,	12 57	
Amount forward,	$ 30,308 89	54,560 06

Amount forward,	$ 30,308 89	54,560 06	
Repairing wagons,	78 04		
Horse shoeing,	7 00		
Forage for horses,	58 31		
Hardware,	18 30		
Advertising and printing,	85 00	30,555 54	

EXTENSION INCIDENTAL EXPENSES.

Legal services,	440 00		
Surveying, &c.,	12 00		
Engraving bonds,	168 21	620 21	
Total expenditure on account water works,			85,735 81

OPERATING EXPENSES.

OPERATING EXPENSES ENGINE HOUSE.

Pay of engineers, firemen and laborers,	$ 3,398 36		
Repair of machinery,	541 84		
Tools and repair of tools, blocks, rope, &c.,	74 48		
Stove and pipe, brooms, nails and miscellaneous,	24 63		
Oil and tallow,	306 82		
Paints,	10 58		
Lumber,	12 06		
Gas and gas fixtures,	322 61		
Packing,	14 80		
Cotton waste,	32 42		
Hardware,	8 25		
Coal (including $14 for wood,)	6,212 58	10,959 43	

OPERATING EXPENSES OFFICE.

Salaries,	2,852 24		
Commissions paid for collecting,	603 27		
Amount forward,	$ 3,455 51	10,959 43	85,735 81

Amount forward,	$ 3,455 51	10,959 43	85,735 81
Rent of office,	1,000 00		
Printed blanks, checks and permit book,	182 00		
Advertising, water rent notices, &c,	147 10		
Stationery,	102 02		
Petty office expenses,	58 23		
Gas,	7 36		
Office fixtures, painting and papering office,	162 79		
Horse, saddle and bridle,	154 25	5,269 26	

OPERATING EXPENSES REPAIRS AND MISCELLANEOUS.

Labor,—repairing and protecting water pipes, fire hydrants, stop-cocks, &c.,	1,835 07		
Carpentry, materials, &c.,—repairing and protecting fire hydrants, stop-cocks and public hydrants,	93 32		
Hauling manure to cover water pipes to secure them from freezing,	125 25		
Forage for horses, horse shoeing, and horse doctoring,	107 05		
Harness and repairing do.,	69 72		
Repairing wagons,	40 37		
Blacksmith work, tools, &c.,	42 18		
Printing report of Jan'y 1st, 1857,	74 00		
Miscellaneous,	32 00	2,418 96	

OPERATING EXPENSES, SALARIES,

Geo. W. Dole, Commissioner, 3 months salary,	233 50		
John C. Haines, Commissioner, 6 months salary,	478 00		
Amount forward,	$ 711 50	18,647 65	85,735 81

Amount forward,.....$	711 50	18,647 65	85,735 81
Orrington Lunt, Commissioner, 6 months salary, ...	478 00		
B. F. Walker, Superintendent, 10 months salary, ...	1,500 00		
P. R. Forrest and A. W. Tinkham, Secretaries, 10 months salary,.	1,250 00	3,939 50	
Total payments for operating expenses,.....			22,587 15

INTEREST ON BONDS.

Coupons W. L. Bonds due July 1st, 1857, and Jan. 1st, 1858, ..		47,940 00	
Exchange paid on drafts,.....		2,165 14	
Commissions paid for selling bonds,		225 00	
Interest on temporary loans,.....		162 00	
Commission paid Duncan, Sherman & Co., for payment coupon acct.,		119 08	50,611 22

SERVICE COCK ACCOUNT.

Service cocks,.....		81 00	
Service cock boxes,.....		162 73	
Tapper's tools, ...		47 77	
Tapper's services,.....		304 98	
Forage for horses, horse shoeing and repairing wagons,.....		36 00	632 48

COAL ACCOUNT.

Coal on hand Jan. 1st, 1858, 1753 tons at $5 62,.....			9,851 86

WATER PIPES.

Cast iron pipes on hand Jan. 1st, 1858, $476\frac{457}{2000}$ tons at $47, ...			22,382 74
Total of monies paid by the Chicago City Hydraulic Co., January 1st to December 31st, 1857, inclusive,....$191,801 26			

TABLE

Showing the number of Dwellings, Stores, Hotels, Manufacturing Establishments, &c., in the City of Chicago, subject to Water Rents and Assessments; also showing the annual rates on same, for the year commencing May 1st, 1858, and ending May 1st, 1859.

471	Dwelling Houses,	$ 5 00	$ 2,355 00
515	" "	6 00	3,090 00
570	" "	7 00	3,990 00
1116	" "	8 00	8,928 00
1088	" "	9 00	9,792 00
1469	" "	10 00	14,690 00
328	" "	11 00	3,608 00
402	" "	12 00	4,824 00
143	" "	13 00	1,859 00
117	" "	14 00	1,638 00
97	" "	15 00	1,455 00
58	" "	16 00	928 00
57	" "	17 00	969 00
42	" "	18 00	756 00
27	" "	19 00	513 00
12	" "	20 00	240 00
21	" "	21 00	441 00
9	" "	22 00	198 00
7	" "	23 00	161 00
9	" "	24 00	216 00
6	" "	25 00	150 00
4	" "	26 00	104 00
10	" "	27 00	270 00
3	" "	28 00	84 00
1	" "	29 00	29 00
3	" "	30 00	90 00
4	" "	31 00	124 00
1	" "	32 00	32 00
3	" "	33 00	99 00
1	" "	34 00	34 00
Amount forward,.....			$61,667 00

	Amount forward,			$61,667 00	
1	"	"	35 00	35 00	
1	"	"	45 00	45 00	
45	"	"Sundry		289 50	
6641					$62,036 50

RECAPITULATION.

NUMBER OF DWELLINGS CONTAINING WATER.

South Division	2,494	$ 24,995 50
North "	1,561	15,012 00
West "	1,585	14,655 00
	5,640	$ 54,662 50

NUMBER DWELLINGS WITHOUT WATER.

South Division	255	$ 1,854 00
North "	340	2,520 00
West "	406	3,000 00
	1,001	7,374 00
	5,640	54,662 50
	6,641 dwelling houses.	$62,036 50

376	Stores at		$ 6 00	$ 2,256 00
11	"	"	8 00	88 00
83	"	"	9 00	747 00
25	"	"	10 00	250 00
47	"	"	12 00	564 00
3	"	"	12 50	37 50
6	"	"	13 00	78 00
13	"	"	15 00	195 00
3	"	"	16 00	48 00
4	"	"	18 00	72 00
3	"	"	20 00	60 00
1	"	"	24 00	24 00
1	"	"	52 00	52 00
576				$ 4,471 50

Amount forward,			$62,036 50

RECAPITULATION.

No. Stores water in, 545,		4,285 50	
" " assessed, 31,		186 00	4,471 50
4 Offices, at	$ 3 00	$ 12 00	
50 " "	6 00	300 00	
1 " "	7 00	7 00	
1 " "	8 00	8 00	
1 " "	10 00	10 00	
57			337 00
2 Bank,	6 00	12 00	
1 "	12 00	12 00	
1 "	20 00	20 00	
4			44 00
1 Building at	14 00	14 00	
1 " "	16 00	16 00	
1 " "	17 00	17 00	
4 " "	18 00	72 00	
3 " "	19 00	57 00	
1 " "	21 00	21 00	
1 " "	22 00	22 00	
2 " "	24 00	48 00	
1 " "	25 00	25 00	
2 " "	26 00	52 00	
2 " "	27 00	54 00	
2 " "	28 00	56 00	
3 " "	30 00	90 00	
2 " "	31 00	62 00	
1 " "	32 00	32 00	
		$ 638 00	
	Amount forward.		$66,889 00

	Amount forward,---------		$638 00	$66,889 00
4	" "	33 00	132 00	
5	" "	34 00	170 00	
1	" "	35 00	35 00	
2	" "	39 00	78 00	
1	" "	42 00	42 00	
1	" "	44 00	44 00	
1	" "	45 00	45 00	
1	" "	47 00	47 00	
1	" "	53 00	53 00	
1	" "	55 00	55 00	
1	" "	60 00	60 00	
1	" "	62 00	62 00	
1	" "	76 00	76 00	
1	" "	83 50	83 50	
1	" "	94 00	94 00	
1	" "	115 00	115 00	
1	" "	116 00	116 00	
1	" "	146 00	146 00	
1	" "	210 00	210 00	
54				2,301 50
3	Churches at	3 00	9 00	
1	" "	4 00	4 00	
4	" "	6 00	24 00	
1	" "	20 00	20 00	
9				57 00
1	Hall at	10 00	10 00	
3	" "	20 00	60 00	
1	" "	22 00	22 00	
5				92 00
2	Schools at	5 00	10 00	
1	" "	6 25	6 25	
	Amount forward.		$16 25	$69,339 50

	Amount forward,		$16 25	$69,339 50
1	" "	8 00	8 00	
1	" "	30 00	30 00	
1	" "	38 00	38 00	
1	" "	41 00	41 00	
2	" "	43 00	86 00	
1	" "	60 00	60 00	
1	" "	70 00	70 00	
11				349 25
2	Theatres, at	10 00	20 00	
1	" "	22 00	22 00	
1	" "	30 00	30 00	
4				72 00
75	Hose, at	5 00		375 00
1	Market Stall,	3 00	3 00	
1	" "	6 00	6 00	
1	" "	8 00	8 00	
1	" "	10 00	10 00	
1	" "	12 00	12 00	
1	" House,	42 00	42 00	
1	" "	48 00	48 00	
1	" "	72 00	72 00	
8				201 00
3	Fountains,	15 00	45 00	
4	"	60 00	240 00	
7				285 00
1	Barb' Shop & Bath'g Sal's	5 00	5 00	
3	" " "	6 00	18 00	
10	" " "	10 00	100 00	
2	" " "	12 00	24 00	
	Amount forward,		$147 00	$70,621 75

	Amount forward,.....				$147 00	$70,621 75
1	"	"	"	14 00	14 00	
2	"	"	"	15 00	30 00	
1	"	"	"	24 00	24 00	
3	"	"	"	36 00	108 00	
1	"	"	"	46 00	46 00	
1	"	"	"	54 00	54 00	
25						423 00
29	Hotels and Bd'g Houses,			10 66⅔	309 33	
22	"		"	12 00	264 00	
6	"		"	12 50	75 00	
5	"		"	12 66⅔	63 33	
4	"		"	13 00	52 00	
74	"		"	13 33⅓	986 67	
14	"		"	13 50	189 00	
6	"		"	14 00	84 00	
4	"		"	14 25	57 00	
3	"		"	14 50	43 50	
5	"		"	14 66⅔	73 34	
22	"		"	15 00	330 00	
2	"		"	15 50	31 00	
9	"		"	15 83⅓	142 50	
35	"		"	16 00	560 00	
4	"		"	16 50	66 00	
16	"		"	17 00	272 00	
1	"		"	17 34	17 34	
2	"		"	17 50	35 00	
16	"		"	18 00	288 00	
6	"		"	18 50	111 00	
2	"		"	18 66⅔	27 33	
11	"		"	19 00	209 00	
3	"		"	19 50	58 50	
16	"		"	20 00	320 00	
1	"		"	20 84	20 84	
7	"		"	21 00	147 00	
		Amount forward,			$4,832 68	$71,044 75

	Amount forward,.....			$4,832 68	$71,044 75
1	"	"	21 33	21 33	
2	"	"	21 50	43 00	
16	"	"	22 00	352 00	
1	"	"	22 50	22 50	
5	"	"	23 00	115 00	
2	"	"	23 50	47 00	
1	"	"	23 75	23 75	
14	"	"	24 00	336 00	
7	"	"	25 00	175 00	
2	"	"	26 00	52 00	
3	"	"	27 00	81 00	
2	"	"	28 00	56 00	
1	"	"	29 00	29 00	
1	"	"	29 50	29 50	
11	"	"	30 00	330 00	
3	"	"	31 00	93 00	
5	"	"	32 00	160 00	
1	"	"	32 50	32 50	
2	"	"	33 00	66 00	
6	"	"	34 00	204 00	
2	"	"	35 00	70 00	
1	"	"	35 50	35 50	
1	"	"	36 00	36 00	
2	"	"	38 00	76 00	
1	"	"	39 00	39 00	
6	"	"	40 00	240 00	
1	"	"	41 50	41 50	
1	"	"	44 00	44 00	
3	"	"	45 00	135 00	
1	"	"	47 00	47 00	
2	"	"	50 00	100 00	
1	"	"	54 00	54 00	
1	"	"	55 00	55 00	
1	"	"	58 00	58 00	
1	"	"	59 00	59 00	
5	"	"	60 00	300 00	
1	"	"	61 00	61 00	
		Amount forward,		$8,552 26	$71,044 75

	Amount forward,		$8,552 26	$71,044 75
1	" "	62 00	62 00	
2	" "	70 00	140 00	
1	" "	74 00	74 00	
1	" "	78 00	78 00	
2	" "	80 00	160 00	
1	" "	81 00	81 00	
1	" "	85 00	85 00	
1	" "	89 00	89 00	
1	" "	98 00	98 00	
3	" "	100 00	300 00	
1	" "	109 00	109 00	
1	" "	120 00	120 00	
1	" "	125 00	125 00	
1	" "	137 00	137 00	
1	" "	150 00	150 00	
1	" "	153 00	153 00	
1	" "	156 00	156 00	
1	" "	163 00	163 00	
1	" "	166 00	166 00	
1	" "	200 00	200 00	
1	" "	266 00	266 00	
1	" "	283 00	283 00	
1	" "	287 00	287 00	
1	" "	289 00	289 00	
1	" "	400 00	400 00	
1	" "	420 00	420 00	
1	" "	460 00	460 00	
473				$ 13,603 26
14	Saloons,	4 00	56 00	
6	"	5 00	30 00	
138	"	6 00	828 00	
4	"	8 00	32 00	
25	"	10 00	250 00	
5	"	12 00	60 00	
2	"	15 00	30 00	
	Amount forward,		$1,286 00	$84,648 01

	Amount forward,		$1,286 00	$ 84,648 01
2	"	16 00	32 00	
1	"	19 00	19 00	
1	"	20 00	20 00	
1	"	22 00	22 00	
199				1,379 00
32	Stables,	2 00	64 00	
10	"	3 00	30 00	
18	"	4 00	72 00	
5	"	5 00	25 00	
6	"	6 00	36 00	
10	"	8 00	80 00	
3	"	9 00	27 00	
6	"	10 00	60 00	
4	"	12 00	48 00	
1	"	13 00	13 00	
1	"	14 00	14 00	
1	"	15 00	15 00	
3	"	16 00	48 00	
1	"	19 00	19 00	
5	"	20 00	100 00	
7	"	24 00	168 00	
2	"	25 00	50 00	
2	"	26 00	52 00	
1	"	28 00	28 00	
4	"	30 00	120 00	
1	"	32 00	32 00	
1	"	34 00	34 00	
5	"	40 00	200 00	
2	"	42 00	84 00	
1	"	42 50	42 50	
1	"	43 00	43 00	
2	"	50 00	100 00	
1	"	57 50	57 50	
2	"	60 00	120 00	
1	"	70 00	70 00	
	Amount forward,		1,852 00	$86,027 01

	Amount forward,		$ 1,852 00	$ 86,027 01
2	"	80 00	160 00	
1	"	86 00	86 00	
1	"	88 00	88 00	
1	"	90 00	90 00	
1	"	95 00	95 00	
1	"	100 00	100 00	
1	"	108 00	108 00	
2	"	120 00	240 00	
1	"	200 00	200 00	
150				3,019 00
1	Laundry,	20 00	20 00	
1	"	120 00	120 00	
2				140 00
2	Stone Yards,	6 00	12 00	
1	"	7 00	7 00	
1	"	12 00	12 00	
1	"	17 50	17 50	
3	"	20 00	60 00	
8				108 50
1	Dye House,	20 00	20 00	20 00
1	Bakery.	3 25	3 25	
1	"	3 50	3 50	
1	"	10 00	10 00	
2	"	10 50	21 00	
1	"	12 00	12 00	
2	"	14 00	28 00	
2	"	16 00	32 00	
1	"	17 50	17 50	
1	"	17 75	17 75	
	Amount forward.		$145 00	$89,314 51

	Amount forward,.....		$ 145 00	$89,314 51
1	Bakery,	18 00	18 00	
2	"	19 00	38 00	
1	"	21 00	21 00	
1	"	23 00	23 00	
1	"	32 00	32 00	
1	"	34 50	34 50	
1	"	36 50	36 50	
1	"	47 50	47 50	
1	"	50 00	50 00	
22				$ 445 50
43	Warehouses,	6 00	258 00	
2	"	8 00	16 00	
5	"	12 00	60 00	
1	" and engine,	17 50	17 50	
1	"	22 00	22 00	
1	"	23 00	23 00	
53				396 50
1	Printing Office,	8 00	8 00	
1	"	12 00	12 00	
1	"	13 00	13 00	
1	" engine,	21 00	21 00	
1	" "	24 00	24 00	
1	" "	27 00	27 00	
1	" "	32 00	32 00	
1	" "	34 00	34 00	
1	" "	46 00	46 00	
2	" "	50 00	100 00	
1	" "	51 75	51 75	
1	" "	52 00	52 00	
1	" "	100 00	100 00	
14				520 75
	Amount forward,			$90,677 26

	Amount forward,.....			$90,677 26
1	Hospital,	32 50	32 50	
1	" U. S.	89 00	89 00	
1	" City.	122 00	122 00	
3				243 50
1	Wood Yard and engine,	15 00	15 00	
1	" "	16 00	16 00	
1	" "	20 00	20 00	
1	" "	32 00	32 00	
4				83 00
2	Packing Houses,	6 00	12 00	
1	"	15 00	15 00	
1	"	103 00	103 00	
4				130 00
33	Shops and Engines.	3 00	99 00	
2	" "	5 00	10 00	
31	" "	6 00	186 00	
3	" "	7 00	21 00	
3	" "	10 00	30 00	
1	" "	11 00	11 00	
5	" "	12 00	60 00	
1	" "	14 00	14 00	
1	" "	15 00	15 00	
2	" "	16 00	32 00	
1	" "	17 25	17 25	
4	" "	20 00	80 00	
1	" "	22 50	22 50	
1	" "	23 34	23 34	
2	" "	23 50	47 00	
3	" "	24 00	72 00	
3	" "	25 00	75 00	
	Amount forward,		$ 815 09	$91,133 76

	Amount forward,.....		$ 815 09	$91,133 76
1	" "	25 75	25 75	
1	" "	26 00	26 00	
1	" "	27 50	27 50	
2	" "	28 00	56 00	
3	" "	30 00	90 00	
3	" "	31 00	93 00	
1	" "	32 25	32 25	
4	" "	35 00	140 00	
2	" "	36 00	72 00	
2	" "	36 50	73 00	
1	" "	38 00	38 00	
1	" "	39 00	39 00	
1	" "	41 00	41 00	
1	" "	43 00	43 00	
2	" "	44 50	89 00	
1	" "	45 50	45 50	
2	" "	46 00	92 00	
1	" "	47 50	47 50	
1	" "	48 00	48 00	
3	" "	50 00	150 00	
1	" "	52 00	52 00	
1	" "	52 50	52 50	
1	" "	54 00	54 00	
1	" "	55 50	55 50	
2	" "	56 00	112 00	
1	" "	57 00	57 00	
1	" "	58 75	58 75	
5	" "	60 00	300 00	
1	" "	63 00	63 00	
1	" "	63 50	63 50	
1	" "	65 00	65 00	
1	" "	67 50	67 50	
3	" "	69 00	207 00	
1	" "	71 00	71 00	
1	" "	75 00	75 00	
1	" "	78 00	78 00	
1	" "	80 00	80 00	
	Amount forward,		$3,595 34	$91,133 76

	Amount forward,.....		$3,595 34	$91.133 76
1	" "	88 00	88 00	
1	" "	89 00	89 00	
1	" "	95 00	95 00	
3	" "	100 00	300 00	
1	" "	103 50	103 50	
1	" "	128 00	128 00	
163				4,398 84
1	Soda Factory,	14 00	14 00	
1	"	15 00	15 00	
2	"	20 00	40 00	
1	"	24 00	24 00	
1	"	30 00	30 00	
1	"	40 00	40 00	
7				163 00
1	Passenger Depot,	10 00	10 00	
1	" "	38 00	38 00	
1	" "	64 00	64 00	
1	" "	368 00	368 00	
2	Freight "	15 00	30 00	
1	" "	21 00	21 00	
1	R.R.Co. (for locomotives)	300 00	300 00	
2	" " "	600 00	1,200 00	
1	" " "	675 00	675 00	
1	" " "	732 75	732 75	
12				3,438 75
2	Vinegar Factory,	10 00	20 00	
1	"	12 00	12 00	
1	"	15 00	15 00	
1	"	20 00	20 00	
1	"	25 00	25 00	
6				92 00
	Amount forward,			$99,226 35

	Amount forward,.....			$99,226 35
2	Distillery,	10 00	20 00	
1	"	13 00	13 00	
4	"	15 00	60 00	
1	"	16 00	16 00	
1	"	17 50	17 50	
4	"	20 00	80 00	
1	"	21 00	21 00	
3	"	22 00	66 00	
1	"	27 00	27 00	
1	"	29 00	29 00	
1	"	30 00	30 00	
1	"	40 00	40 00	
1	"	100 00	100 00	
1	"	466 00	466 00	
23				985 50
1	Brewery,	7 00	7 00	
1	"	12 00	12 00	
1	"	15 75	17 75	
1	"	20 00	20 00	
1	"	25 00	25 00	
1	"	34 00	34 00	
2	"	50 00	100 00	
1	"	54 00	54 00	
1	"	55 00	55 00	
1	"	58 00	58 00	
1	"	93 00	93 00	
1	"	103 00	103 00	
1	"	250 00	250 00	
1	Malt House,	24 00	24 00	
15				850 75
16	Fire Engine and Hose Co.,	6 00	96 00	
1	Book Bindery,	12 00	12 00	
1	Type Foundery,	20 00	20 00	
	Amount forward,		128 00	$101,062 60

	Amount forward,.....		$ 128 00	$101,062 60
1	Hyde and Leather Co.,	28 50	28 50	
1	Convent,	32 50	32 50	
1	Gas and Coke Co.,	300 00	300 00	
21				489 00
	Dearborn Seminary,		30 00	
	Young Men's Association.		28 00	
	American Trans. Co.,		28 00	
	Illinois Stone Dressing Co.,		29 00	
	Rush Medical College.		18 00	
	St. Mary's "		39 00	
	Post Office,		40 00	
	United States Court.		16 00	
	City Bridewell,		40 00	
	Cook County Court House, &c.,		110 10	
	Special Purposes,		52 00	
	Building,		1,072 88	
	Water Cartmen,		404 54	
	Street Sprinklers.		768 25	
				2 297 67
	Total Amount of Water Rents,			$104 227 37
	Number of Buildings burnt and reported to the office,			62

Superintendent's Report.

WATER COMMISSIONERS' OFFICE,
JANUARY 1ST, 1858.

To the Board of Water Commissioners of the City of Chicago:

GENTLEMEN—Again it becomes my duty to report to your honorable body, the progress and present condition of the works under your charge, and to recommend such alterations, additions and improvements, as I may deem of importance at the present time. It is a source of gratification to me to be able to represent the works in a perfect state of repair and their ability to supply the demand made upon them, to fully equal the anticipations of those who designed them. The unexampled prosperity and increase of our city in wealth and population has of course set at defiance all calculations based upon what Chicago was six years ago, and any prudent calculation for the future might fall as far short of the reality as those already made. I think, therefore, there is very little danger of our being likely to extend the works faster than the wants of the city will require. In fact if we had 25 per cent. more distributing pipe laid than we now have, it would no more than answer the demand, and that too in localities which would pay a good per cent. on the investment.

Notwithstanding every thing connected with the works is at the present time in good repair, yet we are suffering considerable inconvenience from the want of additional reservoirs. It is to be regretted that we were unable to commence the reservoirs in the north and west divisions of the city last season as was anticipated.

PREVENTIVES OF COLD WEATHER.

The unprecedented cold weather experienced in this latitude the last two or three winters has advised us that it is necessary to guard our works more effectually against frost. I have accordingly caused the new pipe and other fixtures liable to be injured, to be laid deeper than

was considered necessary when the works were commenced, especially in the sandy portions of the city where I find the frost penetrates to a much greater depth than where the soil is composed of marl or clay substance; much of the freezing last winter was caused however by the necessity of shutting off the water, nights, for the purpose of making the necessary foundation for the new engine. I have had the pipes on Sand street and a portion of Illinois, Ohio and Indiana streets, thoroughly covered with manure.

SINKING OF PIPE.

The pipe on Twelfth street, east of Michigan Avenue, has been sunk from 1½ to 2 feet lower, making it from 5½ to 6 feet below the surface.

I have also caused extra precaution to be taken this season to prevent the fire hydrants from freezing.

EXTENSION OF MAIN.

On the 9th day of April, we commenced again the extension of our 16 inch main on Union street, and on the 13th day of May, the connections were made with the river pipe at Chicago Avenue, and with the distribution pipes on Kinzie street, corner of Union. On the 13th day of June the connections were made between the 24 and 16 inch main at Wolcott street on Chicago Avenue, and also with the new main at the Engine House, and on the same evening the water was let into the new main, when it was found that the pipe had been damaged; and we afterwards ascertained that a pile had been driven through the top of the river pipe at Chicago Avenue, consequently the river pipe had to be taken up and repaired, causing considerable delay. The expense of taking up, repairing, and sinking the pipe in its place, making the connections and other incidental expenses, amounted to the sum of $1909.01.

On the the 20th day of July, the 16 inch main was completed on Union street, as far south as Monroe street; a 12 inch main connecting with the 16 inch on Monroe, near the High School house, and running east to Desplaines street, thence south on Desplaines to Adams street, thence east on Adams street to Clinton, and connecting with the old main at that point; thus forming a circle of mains to the Reservoir. This addition to the main helps to equalize the head and fills the reservoir much sooner than before this connection was made.

EXTENSION OF DISTRIBUTING PIPE.

We have not extended our distributing pipes as much as was intended this year. The whole amount of distribution pipes laid this season is

360	feet of	12	inch.
384	"	10	"
3449	"	8	"
12733	"	6	"
6882	"	4	"

Total, 23808 feet, being a little over 4½ miles.

SIZE OF DISTRIBUTING PIPE RECOMMENDED.

I would recommend that in future all distribution pipe, excepting in short streets and alleys, be not less than 6 or 8 inches interior diameter. Although large pipes are more expensive at first, yet in the end I think we shall find them the most economical. The amount of pipes laid, stop-cocks and hydrants inserted the past year, and the location of each, will appear in their appropriate tables.

CONDITION OF THE LAKE BASIN.

The basin in the Lake from which the water is taken to the pump well, continues to answer the purpose admirably, and but very little sand now finds its way to the well. About fifty dollars has been expended in strengthening it and replacing some stone-filling which was carried out by the waves. The autumnal storms have deposited considerable sand in the north side of the basin, and it will be necessary to expend a small amount in dredging it out early the coming spring.

The aqueduct has required no repairs the past season, and but very little sand has been deposited in it.

ENGINE HOUSE REPAIRS.

The repairs on the engine house the past year have been very trifling, excepting those occasioned by removing the old high-pressure engine and setting up the new one.

NEW ENGINE ERECTION.

On the 11th day of Oct., 1856, we commenced laying the foundation for our new engine. This work was attended with some difficulty on

account of a large amount of masonry having to be built below the surface of water, in the well; in order to do this, it was necessary to keep the water pumped out while the men were at work, consequently the supply of water had to be stopped, and this work to be performed in the night, to avoid inconvenience to water takers.

The tank was filled each night and a watchman stationed at the reservoir to be ready to let out the water in the event of fire. There was no fires, however, during the time we were at work in the well, and the only damage done was freezing of some of the pipes on the account of the flow of water being stopped.

On the 20th day of February, the foundation was ready to receive the lower bed plate of the engine, but owing to some delay in receiving some portion of the machinery, and the great precautions we had to take in making the necessary changes to connect the engine with the works; it was not completed and ready to run until 21st day of July.

CONNECTION OF ENGINE PIPES.

The old cast iron 24 inch pipe leading from the old engine to the standing column, has been taken out and a new wrought iron pipe put in its place, connecting the two engines together and both with the main.

A 24 inch stop-cock has been placed on the channel-ways of each engine, and so arranged that the water can be shut from either engine at pleasure. Before commencing to set up the new engine, our old high-pressure engine had to be moved into the centre of the building, to be there used as a duplicate until the new one was completed. This old engine and boilers are in good condition, and, although not large enough to supply our city at the present time, would be ample for a city of from thirty to fifty thousand inhabitants; and we could afford to dispose of it at such a rate as to make it an object for those requiring such a machine—there being every thing complete—boilers, engine pumps, and suction pipe.

Our new engine is a beautiful specimen of mechanism, and its performance fully equals our expectations, and reflects great credit upon the manufacturer as well as the designer.

NUMBER OF ENGINES.

We have now two powerful pumping engines, either of which is capable of supplying, at a fair rate of consumption, two hundred thousand inhabitants; we also have three large marine boilers, either of

which will make steam sufficient to drive either engine, and connected in such a manner that they can be changed from one engine to another as circumstances may require.

BOILER-ROOM IMPROVEMENT.

A very important improvement has also been made in the south boiler room; the floor has been dropped down about three feet, which prevents, in a great measure, the dust from being blown into the engine room.

BOILER REPAIRS AND COST OF NEW ENGINE.

The old boiler in the north room has been repaired, the cost of which was $258 46. This is the first repair of any magnitude that has been made either on the boiler or engine since the works were started. The cost of the new engine, together with the foundation and necessary alterations at the engine house connected with its erection up to the present time, is $59,021 05. There will be some additional expense to complete the work as contemplated, such as railings, foot-walks, &c., which will cost about $700, making the whole cost of the engine, foundations necessary alterations, and appurtenances, amount to the sum of $59,721 05.

ADAMS STREET RESERVOIR.

The reservoir tank on Adams street, has leaked for some time and the leaks have been gradually increasing until the 16th day of December, when the water was drawn off and some little repair made, and on letting in the water it was found to be nearly tight. It may require some further attention early in the spring. The cost of repairing was $123 18.

There has been laid the past season of 24 in. main on Chicago Avenue,	840 feet.
There has been laid of 16 in. main on Union street,	3,699 "
There has been laid of 12 in. main on Monroe, Desplaines and Adams street,	1,700 "
Total,	6,239

DISTRIBUTION PIPE EXTENSION.

SOUTH DIVISION.

Size of Pipe.	Street.	Between what Streets.	No. of Feet.
6 inch	Wabash Avenue		880 feet
6 "	Old	Wabash Avenue to State	441 "
4 "	Alley	Lake to Randolph	520 "
6 "	Cross	State to west of Clark	1023 "
6 "	State	Liberty to Cross	2805 "
4 "	Michigan Avenue	South of Twelfth	292 "
		Total No. feet,	5961

WEST DIVISION.

Size of Pipe.	Street.	Between what Streets.	No. of Feet.
4 inch	Green	Washington to Madison	495 feet.
6 "	Monroe	Sangamon to Morgan	315 "
4 "	Jefferson	Harrison to Polk	866 "
6 "	Canal	Polk to Peoria	560 "
6 "	Forquer	Canal to Jefferson	783 "
6 "	Clinton	Ewing to Judd	1831 "
4 "	Hubbard	Green to Peoria	377 "
4 "	Carroll	Union and Halsted.	311 "
6 "	Judd	Canal to Clinton	400 "
6 "	Canal	Judd to south of Wright	2100 "
8 "	Morgan	South Vanburen to Tyler	715 "
4 "		For hydrants	165 "
		Total No. feet,	8918

NORTH DIVISION.

Size of Pipe.	Street.	Between what Streets.	No. of Feet.
4 inch	North Market	Kinzie to Michigan	300 feet.
4 "	Michigan	Market to Franklin	397 "
4 "	Franklin	Kinzie to Illinois	586 "
4 "	"	Ohio to Erie	597 "
4 "	"	Chicago Avenue south	852 "
6 "	Superior	Market to La Salle	1195 "
8 "	Wells	Huron to Erie	311 "
6 "	Huron	Clark to Dearborn	400 "
4 "	Hydrant	Cor. Huron and Clark	22 "
8 "	Chicago Avenue	Clark to Wells	800 "
	Amount forward,		5460

Amount forward,			5460	
4 inch	For Hydrant	Corner Wells and Chic. Av.	20	feet.
8 "	Chicago Avenue	Wells to Franklin	411	"
8 "	"	Franklin to Larabee	1212	"
10&12 "	"	Townsend to Sedgewick	744	"
4 "	Hydrant	Corner Avenue and Larabee	28	"
4 "	Hinsdale	Wells Street, west	1054	"
		Total No. feet,	8929	

There has been set up the present season 39 new fire hydrants, making the whole number now connected with the works, one hundred and ninety-two. New stop-cocks have also been placed as follows:

1	8 inch.	Corner Wells and Chicago Avenue.	
1	4 "	" Franklin "	
1	4 "	" Market and "	
1	4 "	" Townsend and "	
1	4 "	" Bremer Av. and "	
1	4 "	" Wessen "	
1	4 "	" Larabee "	
1	4 "	" Townsend and Wells.	
1	6 "	" Clinton and Twelfth.	
1	8 "	" Union and Kinzie.	
1	8 "	" Madison and Union.	
1	16 "	" Wolcott and Chicago Avenue.	
1	12 "	At reservoir, Chicago Avenue.	
1	24 "	" " "	
1	24 "	At engine house.	
2	24 "	At River on Chicago Avenue.	

Total 17

RECAPITULATION.

The whole amount of pipes laid in the city is as follows:—

24 in. Main,		5870	feet.
16 "		9459	"
12 "		10,802	"
30 in. river pipe—	State Street,	280	"
24 " "	Chicago Avenue,	236	"
12 " "	Adams,	176	"
Amount forward,		26,823	"

Amount forward,			26,823	feet.
8	" "	Kinzie,	175	"
12	in distribution pipe,		364	"
10	" "		6,358	"
8	" "		23,824	"
6	" "		75,838	"
4	" "		143,464	"
3	" "		30,301	"
	Total,		307,147	feet.

Making whole length of pipe laid.....58 $\frac{907}{5280}$ miles.

In Schedule A. will be found a list of pipes, branches, sleeves, &c., on hand.

In Schedule B. will be found a list of stock, tools, &c.. at reservoir.

In Schedule C. will be found a list of horses, carriages, harness, &c., in barn.

In Schedule D. will be found a list of stock. tools. &c., in engine house.

HYDRANT IMPROVEMENT—HYDRANTS RECOMMENDED.

We have now thirteen of the New York Hydrants, manufactured by S. P. Ayers, with iron tops; these I should judge were very good of the kind, but like most other kinds, liable to get out of repair; we have three of them in use. One of our citizens, Edward Hamilton, Esq., of the firm of Hamilton & Fuller, has patented a valve, or water gate, which for simplicity of construction, cheapness and durability, I should judge would exceed anything of the kind now in use; it can be used for stop cocks, service cocks, and is particularly well adapted for fire-hydrants, one of which is now in use in front of his shop; it is so constructed that there is no waste of water when the hydrant is in use, and as soon as it is closed, the water wastes out at the bottom almost instantly, so as to prevent any danger of freezing. I would respectfully call the attention of the Board to these improvements, and recommend that arrangements be made for the manufacture or purchase of a quantity of both the cocks and hydrants, and give them a trial in our works.

The following report from the Engineer in charge at the pumping works, gives a detailed account of the duty performed by the Engines, the amount of coal used, and the condition of the engines, boilers, &c., which I here insert as a part of my Report.

Engineer's Report.

To the Superintendent Chicago Water Works:

Sir—In conformity with your request, I herewith present the following statement of the performances, &c., of the several pumping engines connected with the works, for the year ending December 31st, 1857, together with the present condition of the same, and a few suggestions relating thereto.

The North (Old) Engine has not run the past year as much as the previous one, owing to the building of the foundation and erection of new engine, for which purpose the non-condensing engine was necessarily used.

The North Engine has been run the past year 3,454 hours and forty-five minutes, being an average of 13 hours and 43 minutes per day while running, making in that time 1,614,457 revolutions, delivering 837,580,-291 (U. S.) gallons of water, and consuming for pumping 2,218,450 pounds of coal, and for keeping steam when not running 207,450 pounds. This engine has performed well, having no repairs done except the usual re-packing, &c. I think, however, this engine will need a new steam piston in the course of the present year, and I would recommend that one be made and on hand in case of an emergency. I am enabled to report all other parts of this engine in good condition for the execution of the present duty; but in case of more reservoirs being built, I think it would be well to substitute an adjustable cut-off in place of the present one, the cost of which would be small considering the benefits the working of the engine would derive therefrom.

The boiler connected with this engine, in the later part of the summer became out of order by reason of the back end leaking badly, which we were unable to repair at the time, the new one not being completed. This boiler has been in nearly constant use since the works were started, and up to the present time has received no repairs of any consequence. The part alluded to above as out of order has been repaired as well as circumstances would permit; but I think certain parts of this boiler needs a more thorough repairing, when it will be capable of much more service.

The non-condensing (small) Engine.—This engine has performed as well as usual for the past year, having been used through necessity. It being erected temporarily on the floor to make way for the new engine, the

number of hours run by this engine is 2736 and 40 minutes, making in that time 1,196,361 revolutions, delivering 312,270,787 gallons of water, consuming 1,142,450 pounds of coal; 78,350 pounds of this amount was used for keeping steam when not running this engine. The boilers are in good order, both of which have been removed from the building, having no more use for them.

The South (new) Engine was first set in motion on the 21st of July last, but did not supply the city with water until the 22nd of August following, since which time it has been used a good share of the time with satisfactory results; at one time this engine run without stopping a moment 86 hours while repairing the reservoir. This engine has run 746 hours and 50 minutes, being an average of 14 hours per day while running, having made in that time 344,725 revolutions, delivering 140,-647,800 gallons of water, consuming for pumping 363,825 pounds of coal; for keeping steam when not running 43,050 pounds. This engine remains in excellent order.

The boilers of this engine were completed and in use on the 27th of October last, since which time one or the other have been in constant use, it only requiring one to be used, making an abundance of steam, and having a good draught.

Since the completion of the new engine, I am pleased to state the *supply* of water has been uninterrupted.

The small engine and pump for the purpose of pumping the well dry is in course of erection and will be completed in a few weeks. This engine uses steam from the larger boilers.

The city has been without water from this works through the past year 74 hours and 40 minutes, nearly the whole of which time has been at night, and caused in nearly all cases by the construction of foundation and erection of new engine. A large portion of the coal used for the past year was of an inferior quality, compared with that formerly obtained from the same locality, there being much dirt amongst it.

In schedule D. will be found a list of tools and property on hand in the engine-house, all of which is respectfully submitted.

DEWITT C. CREGIER, Engineer.

RECAPITULATION.

Hours run by North (old) Engine,	$3{,}454\frac{45}{60}$
" South (new) "	$746\frac{50}{60}$
" Non-condensing, "	$2736\frac{40}{60}$
Total,	$6{,}038\frac{15}{60}$
Revolutions made by North Engine,	1,614,458
" " South "	344,725
" " Non-con. "	1,196,361
Total,	3,155,543
Gal. of water delivered by North Engine,	837,580,291
" " South "	140,647,800
" " Non-con. "	312,270,787
Total,	1,290,498,878
Pounds coal consumed by North Engine,	2,425,900
" " South "	406,875
" " Non-con. "	1,142,450
Total,	3,975,225
Total pounds of ashes from all coals used by Engines.	213,555

It may be proper to state here, that neither of our engines can at present be used to the extent of their capacity. Number one, (the North Engine,) has to be run as slow as possible, with both pumps attached to prevent over-flowing the standing column; and Engine number two, (the South Engine,) can only be run with one pump attached, and making seven revolutions per minute, consequently we do not get the full benefit of our fuel, having to overcome the whole friction of the engine, while we only use one of the pumps.

When our proposed new reservoirs are completed, we shall get the full benefit of our new main, and be enabled to fill all three tanks in about the same time it now takes to fill one. This will, in all probability, reduce the running of the engines at least one-half, so that instead

of running fifteen hours out of twenty-four, about seven hours will be all that will be required to raise the amount of water used at the present time. It is probable, however, that by the time our reservoirs are completed, that a much larger amount of water will be used, and the running time of the engine may equal, perhaps, ten hours per day. Our large engines are not so constructed as to pump the well dry; and if they were so constructed, it would be very objectionable to pass the sand and other impurities from the bottom of the well through them. Apprehending that it would be necessary after removing the high-pressure engine, to procure a small pumping engine for the purpose of cleaning the pump well, we purchased one of the Wheeler pumps, the cost of which was $1,000. This engine is supplied with steam from the large boilers, and is set upon the floor directly over the bulk head, which divides the well in two parts. A rough floor has also been laid over the well at the level of the lower bed plate of the engine, and an opening cut through the wall, so that all the sediments taken from the well can be thrown out without being taken on to the main floor of the engine-room, by this means we save raising it nearly one-half the distance, besides keeping our engine-room free from sand, &c.

In conclusion, allow me to express my gratification for the uniform courtesy and forbearance manifested by all the officers and employees of this Institution, both towards myself and others, and also for the prompt and efficient management of the different departments connected therewith. All of which is respectfully submitted.

B. F. WALKER,

SUPERINTENDENT.

SCHEDULE A.

LIST OF PIPES, BRANCHES, &C., ON HAND.

Pieces.		Pieces.	
3	24 inch pipe.	58	8 to 10 one way branches
5	broken "	47	4 to 4 " "
9	16 inch "	1	6 to 4 " "
2	12 " "	26	3 to 4 two "
9	10 " "	1	6 to 8 " "
47	8 " "	30	6 to 6 " "
316	6 " "	17	4 to 4 " "
350	4 " "	1	24 to 24 one "

SCHEDUDE A. (*Continued.*)

Pieces.		
96	8 inch caps.	
120	6 "	
105	4 "	
41	3 "	
2	16 to 12 inch tapers.	
1	24 to 16 "	
1	12 to 8 "	
20	8 to 6 "	
8	6 to 4 "	
1	16 inch stop-cock.	
1	8 " "	
2	6 " "	bad.
10	4 " "	"
2	24 inch sleeves.	"

Pieces.		
12	16 sleeves.	
17	12 "	
44	8 "	
55	6 "	
65	4 "	
36	8 inch beveled hubs.	
78	6 " "	
33	4 " "	
21	Stop-cock boxes.	
5	bottom hydrant boxes.	
3	Top " "	
1	24 inch boot jack pipe.	
1	24 inch plug.	
9	16 "	

SCHEDULE B.

STOCK, TOOLS, &C., AT RESERVOIR.

10	Fire hydrants.
1	Old "
1	3 to 4 inch one way branch.
1	4 to 6 " " "
34	Pigs Lead.
1	6 inch cap.
1	4 inch beveled hub.
6	Hydrant branches.
1	4 inch sleeve.
8	Stop-cock frames,
1	Fire hydrant top box.
1	Barrel salt.
2	Iron bars.
2	Sledges.
4	Hardies.
6	Picks.
9	Calking Irons.
1	Cold chisel.
1	Gaskin Iron.
6	Hydrant box straps.
2	Eye bolts.
1	Hydrant box cover.
19	Fire-hydrant nozzles.
2	Stop-cock wrenches.
2	Large furnaces
1	Small "
3	Large kettles.
1	Small "
1	Large furnace grate.
1	Small "
1	Ladle.
1	Chain.
1	Large oil can.
3	Small "
3	Clay moulds.
1	Copper pump.
2	Monkey wrenches.
Lot of old iron.	

SCHEDULE C.

HORSES, CARRIAGES, HARNESSES, &c., AT STABLE.

4 horses,
3 harnesses,
3 wagons,
2 saddles and bridles,
1 sleigh,

SCHEDULE D.

LIST OF STOCK, TOOLS, &c., AT ENGINE HOUSE.

1646 tons of coal,
2 testing presses,
1 copper pump,
1 tin "
Lot of old lead pipe,
22 eye bolts,
7 pig lead,
1 kettle,
1 sledge,
Stop-cock wrenches,
1 4 in. cap,
3 ladders,
3 iron bars,
4 oil cans,
1 axe,
3 sets steel-yards,
1 chain,
1 set scales,
2 fire hydrant-box caps,
2 branch testing rods,
1 vise,
1 plane,
1 pair compasses,
1 chisel,
Lot of old iron,
5 pails,
8 hammers,
3 saws,
1 lantern,
Lot fire-hydrant wrenches,
42 caulking irons,
4 gasket "
1 punch,
14 hardies,
11 cold chisels,
Shovels,
9 picks,
9 hydrant-nozzles,
1 brace,
2 small stop-cocks,
1 monkey wrench,
1 hydraulic press in office,
4 branch testing plates,
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